



منظمة الأغذية  
والزراعة  
للأمم المتحدة

联合国  
粮食及  
农业组织

Food  
and  
Agriculture  
Organization  
of  
the  
United  
Nations

Organisation  
des  
Nations  
Unies  
pour  
l'alimentation  
et  
l'agriculture

Продовольственная и  
сельскохозяйственная  
организация  
Объединенных  
Наций

Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

**MINISTERIAL CONFERENCE ON WATER FOR AGRICULTURE  
AND ENERGY IN AFRICA: THE CHALLENGES OF CLIMATE  
CHANGE**

**Sirte, Libyan Arab Jamahiriya,  
15-17 December 2008**

**WATER FOR AGRICULTURE AND ENERGY IN AFRICA:  
INTRODUCTION TO THEMATIC SESSIONS**

# Introduction to thematic sessions

## Summary

1. The purpose of this note is to provide a framework for debate and guide discussions during the Conference and its three working sessions. It provides background information in support to the three themes of the working sessions, and suggests a series of key questions for discussion.

### A. OBJECTIVES OF THE CONFERENCE

2. The principal aim of the Conference is to examine all aspects of water resources in Africa in the context of rapidly increasing demand from the agriculture and energy sectors and climate change. The Conference will focus on investment needs and management issues of the harnessing of water and irrigation at control and harvesting village level, the rehabilitation and expansion of large-scale hydro-agricultural works and the development and implementation of large water infrastructure and river basins projects, with a view to finding concrete solutions for the effective use and management of water and energy resources to growth and sustainable development in Africa. More specifically, it will assess the challenges faced by the agricultural and energy sectors in Africa the framework of the global food crisis, examining how increased investment can achieve well balanced sub-sectors that would concurrently ensure food and energy security in all countries of the continent.

A key goal will be to identify the financial mechanisms and steps required to promote and secure investment in the sector of water for agriculture and energy in Africa. The Conference represents a great opportunity to mobilize financial support within the framework of the Comprehensive Africa Agriculture Development Programme (CAADP) and ensure that investment commitments are made or confirmed by bilateral, regional and international financing institutions. For this purpose, relevant instruments for follow-up and monitoring of the implementation of commitments should be defined.

3. The Conference will focus on two different time horizons: one based on the CAADP projections for agricultural development investment needs by 2015 under current African population growth trends and food consumption demands. The second time horizon will look at a longer-term perspective, 2030 and 2050, with an African population reaching 2 billion people and where climate change can have a greater impact and influence. The focus will be on concrete programmes and the assessment of their financing costs, both in terms of feasibility studies and implementation of works.

4. The preparation for the Conference included the production of National Investment Briefs for all the African countries, in which estimated investment needs in the water sector for agriculture and energy are discussed. These programmes have been discussed at five regional preparatory workshops which took place between October and November 2008. At the Conference, three working sessions will be organized to discuss findings from the regional workshops and propose recommendations for decision makers. These sessions will attempt to address, in sequence, three main issues:

- The prospects for food and energy demand by 2015 and projections for 2030- 2050;
- The definition of the investment envelope for water for agriculture and energy to meet current and future food and energy demand; and in Africa
- Financing mechanisms and implementation strategies for water for agriculture and energy in Africa.

## **B. THEME 1: PROSPECTS FOR FOOD AND ENERGY DEMAND BY 2015 AND PROJECTIONS FOR 2030- 2050**

5. The basic drivers of demand are population and income growth. Demands for food staples and minimum levels of energy provision for heating, cooking, lighting and transport are necessities. With a total population increasing to 2 billions by 2050, the African agricultural sector will face a substantial productivity challenge. FAO estimates that the demand for food in sub-Saharan Africa alone will more than triple between 2000 and 2050, in response to increased population, higher incomes and improved diets. The regional trends in food import bills continue to rise to unprecedented levels, seriously affecting the balance of trade of most countries in the region. The bulk of these bills are accounted for by staples.

6. In Sub-Saharan Africa, 526 million people live without access to power supply (2002) – with the trend increasing. In some countries, just five percent of the population have access to power, and in some rural areas only two percent. Sub-Saharan Africa is the only region where the absolute number of people not having access to electricity is rising, and it is expected that by 2030, this number will reach about 660 millions, while energy demand in Africa as a whole is expected to double, from 500 million tonnes oil equivalent (Mtoe) in 2000 to 1 000 Mtoe in 2030.

7. Increased climate variability already affects the continent's water resources and these impacts are likely to worsen over time. According to the Intergovernmental Panel on Climate Change (IPCC), agricultural production and food security in many African countries are likely to be severely compromised by climate change and climate variability, and projections indicate reduced crop yields of up to 50 percent in some countries by as early as 2020, with small scale farmers being the most affected.

8. Working Session 1 will tackle these issues, focussing on the prospects for food and energy demand by 2015 and the projections for 2030-2050, the likely implications for agriculture strategies and programmes the energy sector, and possible impact of climate change. Key questions for working session 1 include:

- a) How do countries cope with the prospects of rapid increase in food and energy demand by 2030 and 2050?
- b) How do current water infrastructures perform in response to increasing demand? What are the constraints to improved performances of these infrastructures and how could countries respond?
- c) What is the relative contribution of rainfed production, small scale irrigation and large scale irrigation in terms of food security – are they complementary or do they compete for financial resources?
- d) How does climate change affect projections for 2030 and 2050, and do current adaptation strategies satisfactorily address climate change related challenges?

## **C. THEME 2: DEFINING THE INVESTMENT ENVELOPE**

9. It is clear that accelerated investment in water infrastructure is needed to overcome the internal barriers that hold Africa's productive potential back. Such investments will contribute to growth and poverty reduction through rural electrification and increase in agricultural productivity, and thus to the achievement of the Millennium Development Goals (MDGs). Investment in agriculture has experienced a continuous decline since the 1970's. The consequences of such low and declining investment are manifest in the comparative state of Africa's agricultural water infrastructure. The world area under irrigation amounts to about 20 percent of total arable land, while in Africa only 7 percent of arable area is irrigated and the figure drops to 4 percent for% sub-Saharan Africa. This compared to 38 percent for Asia.

10. The 2008 World Development Report of the World Bank has clearly indicated that public investment in agriculture is badly needed to reverse the current trend. The commitment of the 2003 Maputo Summit to allocate within 5 years 10 percent of national budgets to agriculture, responds to this concern. But while some progress has been registered in this area, the continent as a whole is still far from reaching the agreed target.

11. The attempts to quantify the demand for public investment in water for agriculture and energy in Africa remain a difficult exercise. In 2003, the NEPAD-CAADP had estimated at USD 37 billion the total investments needed between 2002 and 2015 in land management and water control in Africa. A recent FAO/IFAD study estimates at USD 85 billion the total cost of water infrastructure that should be developed to support rural poverty reduction in sub-Saharan Africa. In terms of energy needs, the Infrastructure Consortium for Africa (ICA) estimates that to achieve 35 percent electricity access by 2015, sub-Saharan Africa (excluding South Africa) would require a total investment of USD 47.8 billion per year (shared almost equally between investment and operations), equivalent to 6.7 percent of sub-Saharan Africa's aggregate GDP. The preparatory work to this Conference has shown that the cumulated amount of investment of on-going and pipeline projects on water for agriculture and energy in Africa is about USD 62.5 billion.

12. It is important for countries to be clear about investment needs in the productive use of water to address food security and poverty alleviation and to promote growth. An investment framework approach is necessary to make a sound quantification of the overall financial needs in relation to specific policy targets and help reorganizing water investments. The approach combines sectoral typologies (such as irrigation schemes or power generation facilities), development objectives and time horizons in a way that facilitates strategic planning and the establishment of cost envelopes. It translates specific policy measures into programmes, projects and budgets, considering institutional, regulatory and legal as well as infrastructural measures. For the investment framework to be effective, it must define in general terms what needs to be done in order to achieve the objective in question.

Working Session 2 will examine current investment portfolios, based in part on the results of the regional workshops, and discuss them in relation with stated development targets. Key questions may include:

- Are current investment trends and projections in water for agriculture and energy in Africa line with expected demand for food and energy?
- How are priorities defined and applied to existing project portfolios? How do they match the need for efficiency and equity and how can public and private investments be better prioritized and programmed?
- Do approaches to planning vary according to the nature of investment target (e.g. poverty reduction or expanded commercial production)?
- How can the demands for low intensity but highly distributed investments be calculated (as opposed to high intensity public infrastructure such as dams and conveyance canals) and how can their impact be assessed in terms of poverty reduction and economic growth?

#### **D. THEME 3: FINANCING MECHANISMS AND IMPLEMENTATION STRATEGIES**

13. The role of public funding in the provision of water and energy services has been dominant in the past and will remain important in the future. In addition to traditional sources of funding, there are signs of new sources of financing through non traditional donors and foundations like AGRA and the Gates Foundation, among many others, and agricultural joint ventures between countries with financial and technological resources and countries that are well endowed in natural and human resources..

14. The role of international financing institutions (IFIs), mainly the World Bank, AfDB, IFAD and sub-regional banks, will remain fundamental in supporting macro- and micro-economic approaches, alongside traditional bilateral and emergent donors. Country Water Resource Assistance Strategies (CWRAS) were designed as a means of integrating World Bank assistance for all the water-related sub-sectors within an integrated water resource management approach. As such, it represents a prime instrument for linking irrigation sector strategy and investment needs to the Poverty Reduction Strategy Papers (PRSP) and the overall Country assistance strategies (CAS), and should ensure that agricultural water is adequately represented in CWRAS, the PRSP and the CAS.

15. Global and regional programmes in finance initiatives are showing signs of convergence: The two main umbrella programmes that implicate water management and are applicable to agriculture and energy are the NEPAD-CAADP and the G8-led Infrastructure Consortium for Africa (ICA). One important tool is the Multi-donor Trust Fund (MDTF) being established at the World Bank to provide support to the CAADP process at country and Regional Economic Committee (RECs) levels.

16. Where government revenues are not sufficient to generate capital expenditure programmes and also to cover operation and maintenance costs, public-private finance initiatives are starting to play a more prominent role where long term returns to capital can be assured.

17. Efforts to boost and accelerate investment for food and energy security must remain coherent with the principles of the Paris Declaration on Aid Effectiveness and the Accra Agenda for Action, and therefore to build on available funding mechanisms. Examples exist of vertical funds to address specific issues at regional level. The question is whether there is a need for such vertical funds to be promoted or existing financing mechanisms to be scaled up in order to accommodate the additional financing.

18. However, any strategy to accelerate investment toward priority targets must be accompanied with substantial pre-investment efforts in enhancing absorptive capacities at local, national and regional levels, in the public as well as private sectors. Such efforts should include capacity building at all levels, institutional strengthening, and addressing pressing issues of markets and land tenure. The lack of institutional and human capacities often leads to sub-optimal use of investment resources. As long as no sufficient efforts are made to address the institutional and human dimensions of development, it is unlikely that investment in infrastructure will have the anticipated impact.

19. Implementation strategies should also consider the potential of regional integration. There are three concrete fields in which regional integration can help to enhance the viability of investments in the water sector for agriculture and energy in Africa: river basins management, agricultural markets, and power grids. River basin management, as transport and trade corridors present such opportunities and are well recognised as such. Most countries in Africa share transboundary rivers with their neighbours. As water resources develop, the need arises for better integration of national plans within a river basin management framework. Inter-basin water transfers, when appropriate, also require viable regional cooperation mechanisms. The development of regional markets for agricultural commodities can go a long way in improving the continent's capacity to feed itself while reducing the cost of food. Finally, improved inter-connectedness between countries in terms of electricity provision through regional power grids could translate into scale economies and subsequent reduction in the cost of electricity.

An important element in any financing exercise is to ensure that commitments materialize. This calls for the definition and design of appropriate follow-up and monitoring mechanisms for the implementation of investment commitments made by bilateral, regional and international financing institutions. This would also ensure coherence and synergy in actions undertaken.

20. Working Session 3 will discuss financing and implementation approaches in relation to national and regional priorities for acceleration of investment programmes in water for agriculture and energy in Africa. Key questions may include:

- What types of financing mechanisms will best suit short-, medium- and long-term investments?
- What is the potential for public/private partnerships in investment and management of water infrastructure for agriculture and for energy? Are there differences between the two sectors? What conditions must be met to promote private investment in the water sector in Africa? What could be done to forge private-public partnerships in Africa in the sectors of water, agriculture and energy??
- What implementation strategies are needed at regional, national and local levels to ensure the viability of proposed investments? In particular, what institutional, policy and capacity building plans are needed to boost and secure return from investments in water for food and energy security? What are the relevant mechanisms for follow up and monitoring of the investment commitments made by bilateral, regional and international financing institutions?
- What is the scope for “vertical funds” in support to water for food and energy security, and relation with existing funding mechanisms (ICA)?
- What is the scope for enhanced regional integration to boost investment in response to increased food and energy demand on the continent?